



***NETWORK GENERAL CORP.  
CORPORATE BACKGROUNDER***

*Prepared May 1987*

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## *Summary*

Network General is a company which produces unique measurement and analysis instruments for the local area network industry. Its first product, "The Sniffer™", provides a remarkable capability to look into a LAN, and grasp almost instantly the cause of problems which were hitherto essential invisible. This "network X-ray" allows qualified personnel to develop, analyze or repair networks using radically new technology.

By supporting virtually all popular hardware and software standards of significant market size, Network General supplies to a broad range of highly competitive companies, each of whom offers networking in their product line. Network General's product line is marketed domestically using a manufacturer's representative sales force, with previous training and experience in analogous products for the wide-area networks. International sales are handled through country-wide distributors.

Through an aggressive program of marketing, company-wide adoptions and OEM licensing, The Sniffer is on its way to becoming an industry standard itself. In less than one year of operation, Network General has installed over 50 units in virtually all of the highly prestigious computer and networking companies.

## *Overview*

Networking systems occupy a leading edge in the rapidly developing field of multi-user microcomputer and super-micro applications, enabling entire workgroups to gain the advantages of distributed processing, shared file storage and centralization of routine operations. But networks are complicated and growing even more so, as they proliferate. With the growth in numbers of these systems, the need for diagnostic tools is emerging as an absolute necessity for corporate network managers, corporate service organizations, network systems developers, manufacturers of network-compatible hardware and software, and independent network integrators.

The complexity of workgroup systems stems in part from the fact that they typically incorporate a broad mix of multi-vendor equipment and software. Without the proper tools to quickly and effectively ferret out the source of network problems whether from software, hardware or user error, to monitor system efficiency, to deal with downtimes and lost messages, or to evaluate expansion needs, system management becomes an exercise in futility. Every professional in the field recognizes that the lack of effective diagnostic and analytic tools is an impediment to smooth system performance and cost effectiveness. And, anyone involved in pilot studies craves analytic tools to help determine critical but unknown factors, such as peak utilization.

## *Company Profile*

Network General Corporation was founded in 1986 by two of the computer industry's leading contributors in network technology specifically to address the issue of network diagnostics. They plugged a gap by introducing an essential diagnostic instrument both novel in concept and effective in execution. Dubbed "The Sniffer"<sup>™</sup>, it is an advanced assistant that captures all the frames transmitted on a network and provides analytic tools capable of examining a system's effectiveness at many levels of detail or summarization. This product is clearly a major step forward in simplifying the analysis of and dealing with the unique challenges presented by networks.

The underlying philosophy of Network General's founders is to deliver to the marketplace instrument systems of unparalleled quality and utility in the field of networking. As a company, Network General represents experience, knowledge, and skill - all essential ingredients in attracting highly-regarded professionals in the field of network technology. The products originating from these creative and highly motivated individuals are world-class instruments which incorporate today's leading edge technologies and exhibit the polish and feel that comes from years of experience and a dedication to excellence.

Corporate headquarters, marketing, technical support and manufacturing are located in Sunnyvale, California, in the heart of "Silicon Valley".

## *Marketing*

Network General designs, develops, manufactures and markets a line of instrumentation systems for a broad range of applications within the area of both broadband and baseband networking. The market for diagnostic tools for large complex networking systems has lagged far behind the brisk pace of sales for such systems. Network General has targeted this largely overlooked market niche by introducing products designed to aid large corporate users and developers of networking products. And the product line, because of its portability and intuitive design, is a boon to service personnel and systems integrators who, until now, have had few tools with which to service their clients' networks.

Network General's current products are designed for the IBM Token Ring and Ethernet markets and are available to the public through an international sales representation organization. Several OEM license agreements have been negotiated with well-known leaders in the computer industry, including Data General and Datapoint. These agreements will result in additional versions of Sniffer technology, sold by these OEMs to their particular target customer base, co-branded with their and the Network General logo. The present agreements cover two additional technologies, namely StarLAN and ARCnet, which will soon be introduced jointly by Network General and these OEMs. Network General plans to develop and license additional technologies, such as the IBM PC NW baseband and broadband. Special licensing arrangements are also available for corporate-wide adoptions by networking service organizations. The first of these agreements was recently completed with Bridge Communications, Inc. of Mountain View, Calif.

## ***Competitive Profile***

At present, Network General's direct competitors are few: they are companies pre-dating Network General and its introduction of The Sniffer and they are active primarily in the Ethernet-only environment. Network General's competitive edge is its position as the sole company offering diagnostic and analysis tools for Token-Ring, Ethernet, ARCnet and StarLAN networks. The product itself is superior to those of its competitors in its range of options, depth of sophistication, its attention to detail, portability, and its facility of use. And, underlying the excellence of its products and their speedy acceptance in the marketplace is the most significant of Network General's strengths - the skill, experience and reputation of its founders whose stature in the area of networking is acknowledged by peers and press alike.

Network General has established a reputation as a company committed to high quality instrumentation which, first and foremost, serves the purchaser's needs, and having no particular "axe to grind" by favoring one particular network technology or software protocol.

## ***Product line***

### ***Hardware Overview***

Network General's Sniffer is a protocol analyzer with data collection and analysis capabilities. It is offered as a complete stand-alone portable unit with a choice of three versions: an Ethernet (IEEE 802.3) model, an IBM Token-Ring Network (IEEE 802.5) model, and a Dual-LAN model incorporating both 802.3 and 802.5 capabilities in a single unit.

The basic hardware is packaged in a highly rugged and well manufactured portable device. The unit contains as standard features virtually all options that a customer might desire - high performance (8 Mhz 286 CPU), maximum memory size (640 KB RAM), large and fast non-removable disk (20 MB), a floppy disk drive (360 KB) and built-in ports for optional external printers, modems and color video monitors.

Into this enclosure are added special purpose adapter boards which contain a combination of proprietary hardware and software which enable them to copy all network traffic they are attached to (a non-standard capability), and to filter and timestamp them in real-time, under very heavy load conditions.

### ***Software Overview***

The basic Sniffer software module collects, filters and displays network packets. The Sniffer incorporates a complete family of protocol decoders capable of displaying detailed byte-by-byte English language interpretation of network protocols. This unique capability makes it feasible for individuals, such as field service personnel or system managers, who are not "gurus" in protocol analysis, to manage problem resolution in situations hitherto unheard of. Network General supports a variety of LAN operating software systems such as IBM PC LAN Software, Novell NetWare™, 3Com 3+™, and MS-Networks™.

## ***Customer Profile***

### ***Customers***

Since Network General began shipping its first Sniffer units in the fall of 1986, its customer list has grown rapidly and represents an impressive cross-section of Fortune 500 companies. Customers such as United Airlines, IBM, Shell Oil, Wang, DEC, NCR, Bridge Communications, DCA, Travelers Insurance, ADP and Travenol Laboratories, to name a few, were all quick to recognize the utility of The Sniffer. Many of these customers have purchased multiple systems.

### ***Market segments***

Network General products are designed to work with a broad range of network hardware and software environments. The company independently develops those systems having significant or large market share. It jointly develops, on a contract basis, custom versions for other technologies which it cannot justify for internal development.

A summary of market segments interested in Sniffer products includes:

LAN Users	Fortune "2000" companies running large networks where performance, reliability, and timely problem-solving are essential.
LAN Developers	Equipment and software companies seeking to assure the highest performance, reliability and compatibility while conforming to industry standards in their development of LAN products.
LAN Integrators	Field service groups of LAN equipment and software suppliers, VARs, VADs, independent consultants and other organizations concerned with assisting users in effectively using LANs and LAN-related products.
OEMs	Network General negotiates OEM equipment and software supply and licensing agreements with qualified industry manufacturers and vendors.
Universities	Network General has a special program for institutions of higher education concerned with the performance and analysis of complex local area networks. Under the ENAP™ program - Educators' Network Analysis Partnership - colleges and universities may purchase Sniffer systems at a forty percent discount.

### ***Customer support***

Network General provides a one-year warranty for both hardware and software. Network General provides customer support through an agreement with Businessland Corporation outlets throughout the U.S. Customers may elect to send their unit directly to company headquarters for service, or bring it to a local Businessland for 24-hour turnaround.

## ***Management***

**Dr. Harry J. Saal**, founder and president, has gained a rich background of relevant experience in eighteen years of both technical and senior management contribution in the computer field. He worked for IBM in a variety of development positions for six years and, in 1978, founded Nestar Systems, Inc., a pioneer of high performance local area network systems for personal computers. He currently serves on the boards of directors of several high-technology companies, and has held faculty positions in computer science at Stanford University, The Technion in Haifa, Israel, and The State University of New York. Dr. Saal holds a Ph.D. in High Energy Physics from Columbia University.

**Dr. Leonard J. Shustek**, co-founder and vice president for Research and Development, has fourteen years of directly related experience in advanced computer technology. In addition to being a co-founder and vice president for future products at Nestar Systems, Inc. where he made major contributions in high performance network hardware and software, Dr. Shustek has been affiliated with several industry pioneers, including DEC, Amdahl, Zilog, Honeywell, IBM, General Electric and the Stanford Linear Accelerator Center. He has taught computer science at Stanford University, Carnegie-Mellon University, New York University, and the Polytechnic Institute of New York. Dr. Shustek holds a Ph.D. in Computer Science from Stanford University.

**Mr. George E. Comstock**, vice president for Marketing and Sales, was vice president, Engineering for Potter Instrument Company and then Singer Business Machines before founding Diablo Systems, Inc. in 1969, the originators of the "Daisy Wheel" printer. He also founded Durango Systems, Inc., creators of the industry's first fully-integrated, multi-user supermicro computer for business applications. Mr. Comstock holds ME and EE degrees as well as an honorary Doctor of Engineering from Worcester Polytechnic Institute, and an MS in Physics from Cal Tech.